

AMENDMENTS TO THE CLAIMS

1. **(Currently Amended)** A polygonal barrel sputtering device comprising:

a vacuum container for containing fine particles which has a polygonal internal shape on a cross section substantially parallel with a gravitational direction, the polygonal internal shaped configured to enable the fine particles to be rolled and stirred during rotation of the vacuum container;

a rotating mechanism for rotating said vacuum container about a rotating axis which is substantially perpendicular to said cross section; and

a sputtering target arranged in said vacuum container,

wherein sputtering is performed while stirring or rolling the fine particles in said vacuum container by rotating said vacuum container using said rotating mechanism so that surfaces of the fine particles are coated with ultra-fine particles having a grain diameter smaller than the fine particles or thin films.

2. **(Original)** A polygonal barrel sputtering device according to claim 1 further comprising a vibrator for vibrating said vacuum container.

3. **(Previously Presented)** A polygonal barrel sputtering device according to claim 1 further comprising a heater for heating the fine particles contained in said vacuum container.

4. **(Previously Presented)** A polygonal barrel sputtering device according to claim 1 further comprising a rod-like member contained in said vacuum container, wherein said rod-like member vibrates the fine particles so as to promote stirring and rolling the fine particles while said vacuum container is being rotated.

5-19. **(Cancelled)**

20. **(Previously Presented)** A polygonal barrel sputtering device according to claim 2 further comprising a heater for heating the fine particles contained in said vacuum container.

21. **(Previously Presented)** A polygonal barrel sputtering device according to claim 2 further comprising a rod-like member contained in said vacuum container, wherein said rod-like member vibrates the fine particles so as to promote stirring and rolling the fine particles while said vacuum container is being rotated.

22. **(Previously Presented)** A polygonal barrel sputtering device according to claim 3 further comprising a rod-like member contained in said vacuum container, wherein said rod-like member vibrates the fine particles so as to promote stirring and rolling the fine particles while said vacuum container is being rotated.

23-28. **(Cancelled)**

29. **(Previously Presented)** A polygonal barrel sputtering device according to claim 1, wherein said vacuum container has a hexagonal internal shape when viewed in cross section and said hexagonal internal shape is configured to enable the fine particles contained therein to fall periodically by gravity when said rotating mechanism rotates said vacuum container.

30. **(Previously Presented)** A polygonal barrel sputtering device according to claim 1, wherein said vacuum container is configured with said polygonal internal shape in such a manner that, upon rotation of said vacuum container, the fine particles contained therein fall periodically by gravity.